

Serial Number: Unknown

Filing Date: December 4, 2001

Title: METHOD AND STRUCTURE FOR IMPROVED ALIGNMENT TOLERANCE IN MULTIPLE, SINGULARIZED PLUGS

13 12
35. (New) The integrated circuit of claim 34, wherein the pair of outer plugs are formed from conductive material.

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36. (New) The integrated circuit of claim 32, wherein the pair of spacers are formed from insulating material.

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37. (New) The integrated circuit of claim 32, wherein:
a first outer plug of the pair of outer plugs is formed on one side the inner plug; and
a second outer plug of the pair of outer plugs is formed on another side the inner plug.

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38. (New) The integrated circuit of claim 32, wherein:
a first spacer of the pair of spacers is formed on one side the inner plug; and
a second spacer of the pair of spacers is formed on another side the inner plug.

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39. (New) The integrated circuit of claim 32, wherein the surface structures are formed from semiconductor material.

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40. (New) An integrated circuit comprising:
a plurality of surface structures formed over a substrate, each of the surface structures having a top surface;
an inner plug formed between a pair of surface structures among the plurality of surface structures and formed under the top surface of each surface structure of the pair of surface structures;

an inner electrical contact formed on the inner plug;
a first outer plug and a second outer plug, each of the first and second outer plugs having an upper portion formed over at least a portion of the top surface of one surface structure of the pair of surface structures; and

a pair of spacers, each spacer of the pair of spacers having a spacer portion formed over at least a portion of the top surface of one surface structure of the pair of surface structures for isolating the inner plug and the inner electrical contact from the first and second outer plugs.

19 41. (New) The integrated circuit of claim 40, further comprising an isolation structure formed around the inner electrical contact, the isolation structure being formed from insulating material.

20 42. (New) The integrated circuit of claim 41, further comprising an isolation layer formed over the first and second outer plugs.

21 43. (New) The integrated circuit of claim 40, wherein the inner plug is formed from conductive material.

22 44. (New) The integrated circuit of claim 43, wherein the pair of spacers are formed from insulating material.

23 45. (New) The integrated circuit of claim 40 further comprising:
a first contact region formed through the isolation layer and connected to the first outer plug; and

a second contact region formed through the isolation layer and connected to the second outer plug.

24 46. (New) The integrated circuit of claim 45, wherein the first and second outer plugs are formed from conductive material.

25 47. (New) The integrated circuit of claim 46, wherein the first and second contact regions are formed from conductive material.

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48. (New) The integrated circuit of claim 47, wherein each of the first and second contact regions is tapered.

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49. (New) An integrated circuit comprising:
a plurality of surface structures formed over a substrate each of the of surface structures having a top surface;
an inner plug of conductive material formed between a pair of surface structures among the plurality of surface structures and formed under the top surface of each surface structure of the pair of surface structures;

an inner electrical contact formed on the inner plug for proving electrical connection to the inner plug, wherein the inner electrical contact is buried in an isolation layer;

a first outer plug of conductive material and a second outer plug of conductive material, each of the first and second outer plugs having an upper portion covering at least a portion of the top surface of one surface structure of the pair of surface structures; and

a pair of spacers of insulating material formed between the inner plug and the inner electrical contact and the first and second outer plugs.

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50. (New) The integrated circuit of claim 49, wherein the inner electrical contact forms a conductive line for electrically connecting to the storage node plugs via the substrate.

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51. (New) The integrated circuit of claim 49, wherein the surface structures includes a plurality of conductive lines for creating electrical contacts between the inner electrical contact and the first and second storage node plugs and via the substrate.

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52. (New) The integrated circuit of claim 49 further comprising a second isolation layer formed over the first and second outer plugs.

PRELIMINARY AMENDMENT

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31. (New) The integrated circuit of claim 50 further comprising:
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a first contact region formed through the isolation layer and connected to the first outer
plug; and
a second contact region formed through the isolation layer and connected to the second
outer plug.

New claims 32-53 read on the elected species. The Examiner is invited to contact
Applicant's Representative (612) 373-6969 with any questions regarding the present application.

Respectfully submitted,

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Date 9.17.02

By 

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, C. 20231, on this 17 day of September, 2002.

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